

28th Bomb Wing, Ellsworth AFB

November 9, 2010

Public Meeting Restoration Advisory Board



**This Briefing is:
UNCLASSIFIED**





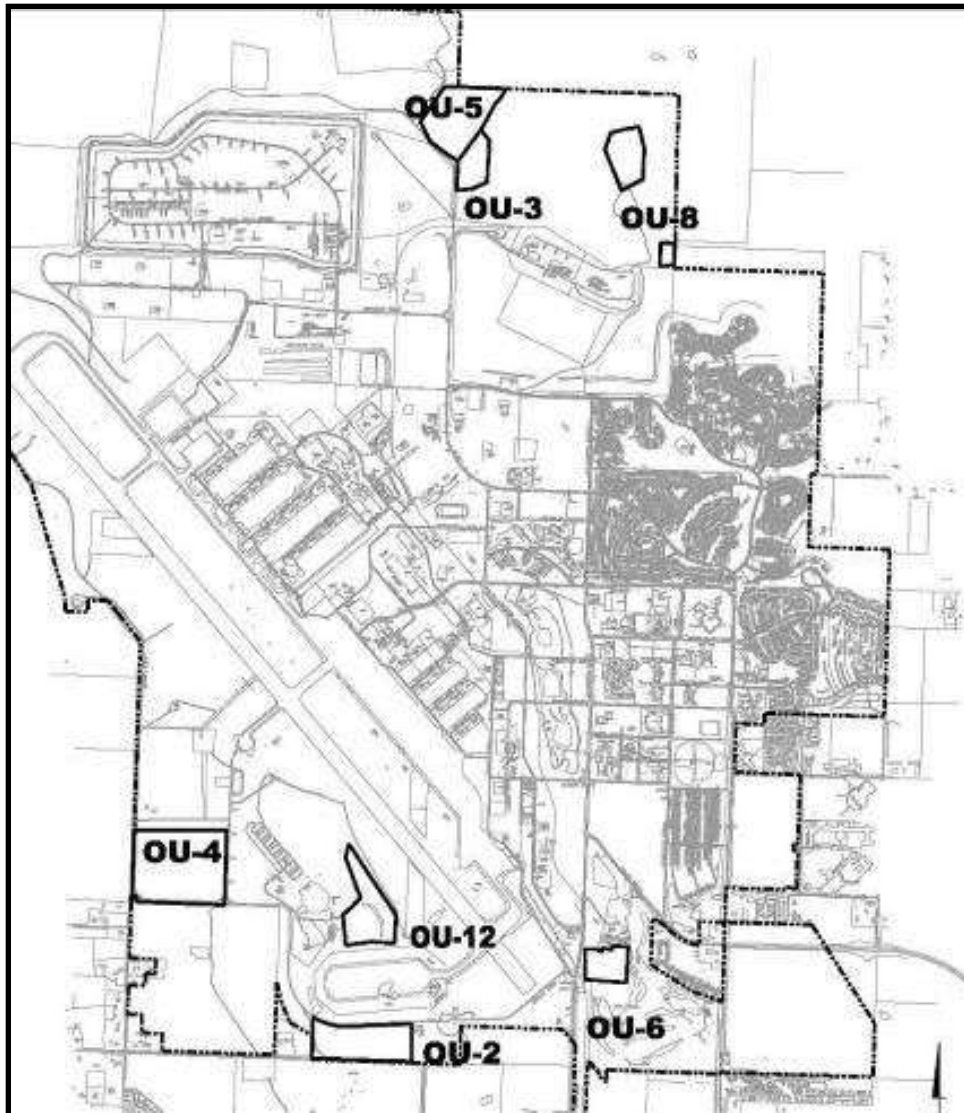
Presentation Outline



- **Status of Work**
 - **Landfills**
 - **Petroleum Release Sites**
 - **On-Base Chlorinated Plume Sites**
 - **Five Year Review**
 - **Off-Base TCE Plume and Exit Strategy**
- **Future Plans**



Landfill Sites

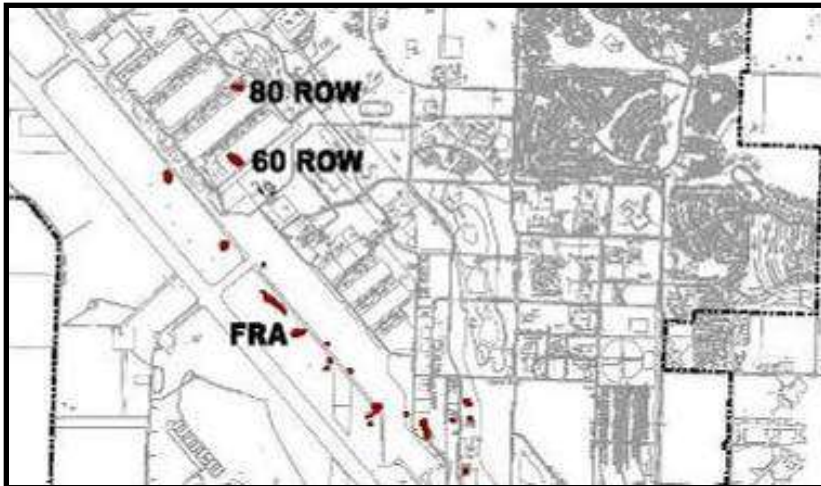


- 7 operable units with soil covers that were installed in 1995 & 1996.
- Semi-annual inspections indicate soil covers are in good condition.
- Test results are below standards.
- Inspections and sampling will continue on a semi-annual basis.



Petroleum Release Sites

60 Row and 80 Row

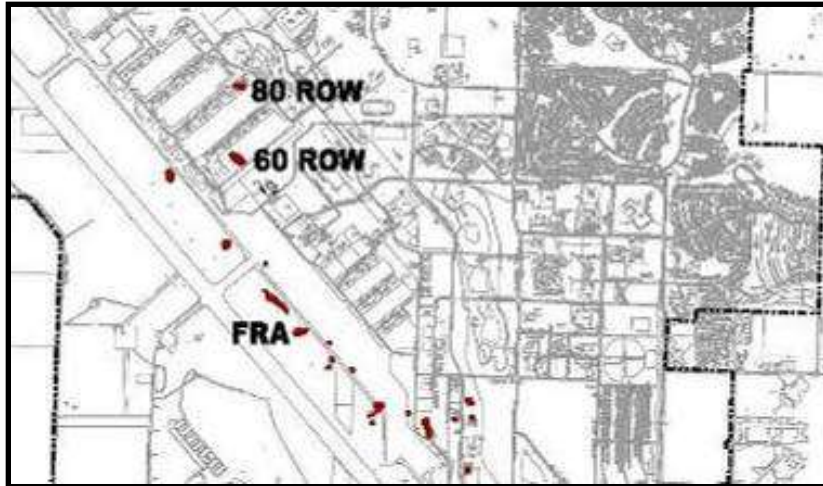


- Goal is to achieve No Further Action (NFA) from SDDENR.
- Both sites treated in 2008 using surfactant enhanced aquifer remediation (SEAR) to remove free product (fuel).
- Monitoring continues for one 60 Row well due to elevated benzene concentration. October sample results are pending. Site may be recommended for NFA status or additional sampling.
- Benzene concentration fluctuating in one well at 80 Row. Final (2-Year) sampling event per Work Plan completed in October and the results are pending. No product detected since SEAR re-treatment in June 2009. Site may be recommended for NFA status or additional sampling.





Petroleum Release Sites Flightline Refueling Area (FRA)



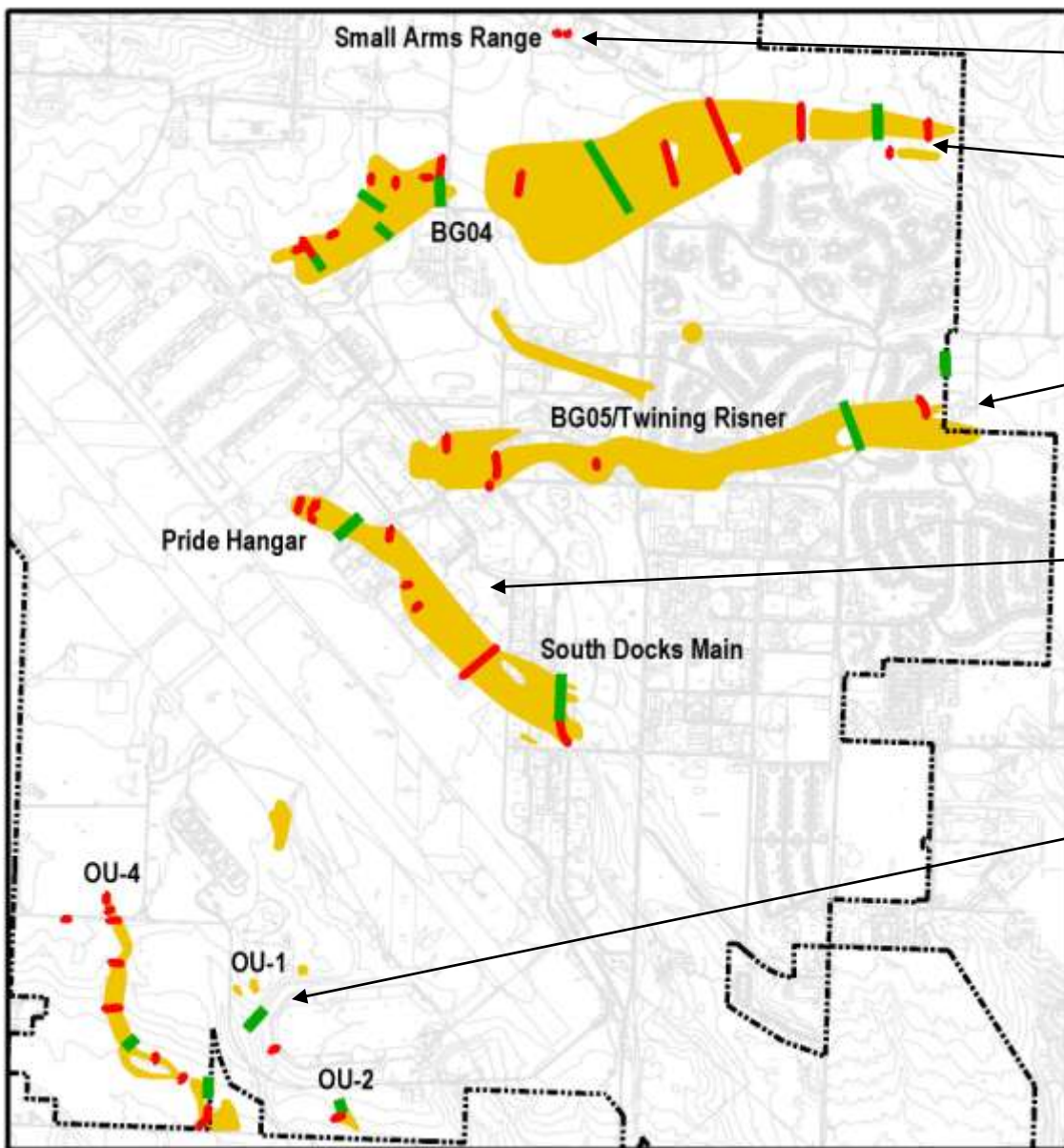
- Goal is to achieve NFA at 7 pump houses.
- Achieved NFA at 3 pump houses (PH2, PH3, and PH6).
- PH4 and PH7 are currently under consideration for NFA.
- Monitoring frequency increased at PH1 due to naphthalene fluctuation in one well. This well was sampled in October (results pending) and will be sampled in January 2011.
- Increasing trend of benzene was observed at PH5. Area being treated using dissolved oxygen. Monitoring will continue at the site into 2011.



Flightline, Pump House 1



On-Base Chlorinated Plumes – In-situ Reductive Treatment (IRT)



1 treatment zone

10 treatment zones. Reinjecting 4 zones and added 2 extensions this summer.

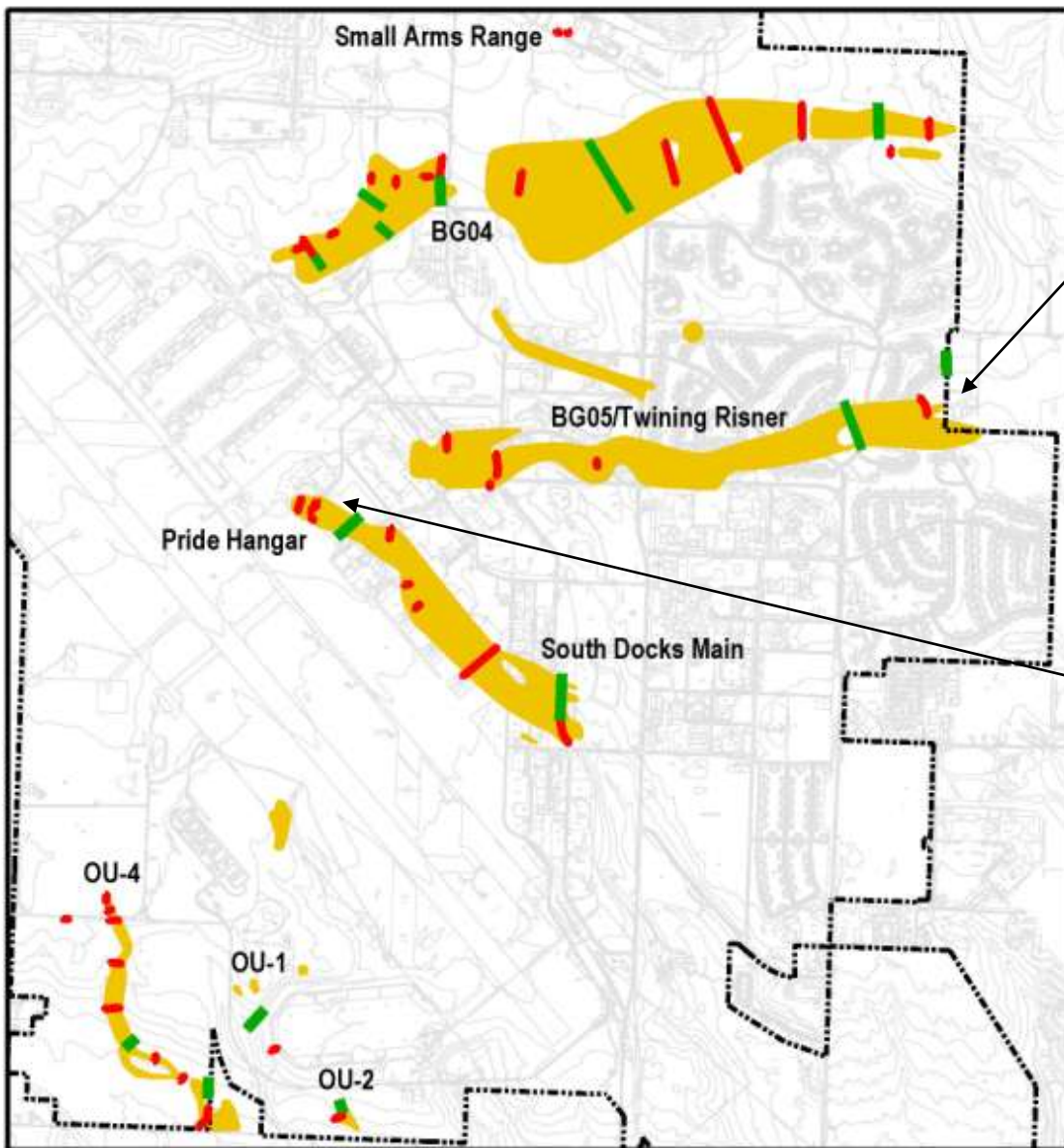
6 treatment zones. Reinjecting 2 zones this summer.

8 treatment zones. Reinjecting 2 zones this summer.

13 treatment zones. Reinjecting 4 zones this summer.



On-Base Chlorinated Plumes – Additional Sampling



- Increasing TCE concentrations found near Base Boundary in April 2010.
- Confirmation sampling completed in July and October to track TCE trend.
- Extraction well was restarted and an IRT extension is planned .
- Quarterly sampling planned into next year.
- Pride Hangar AOC soil not included in Partial Deletion (2005).
- Collected 14 vadose zone soil samples to determine if regulatory deletion is appropriate.



Operable Unit 1 (OU-1)



OU-1 Well Field



OU-1, Treatment Trailer in Background

- OU-1 has a mixed contaminant source area (chlorinated solvent and petroleum).
- Groundwater and SVE systems removed large amount of contaminants from 1996 to 2005, then recovery rates significantly declined.
- Optimization since 2006:
 - Added borings and wells
 - Implemented high vacuum extraction
 - Converted SVE to bioventing,
 - Installed and operated oxygen diffusers
 - Installed two IRT treatment walls
 - Reinjecting one IRT treatment wall in 2010
 - Converted bioventing to biosparging in 2010
- January 2010 soil testing found vadose zone soils were below OU-1 ROD cleanup goals. Regulatory deletion is under consideration.



Five Year Review

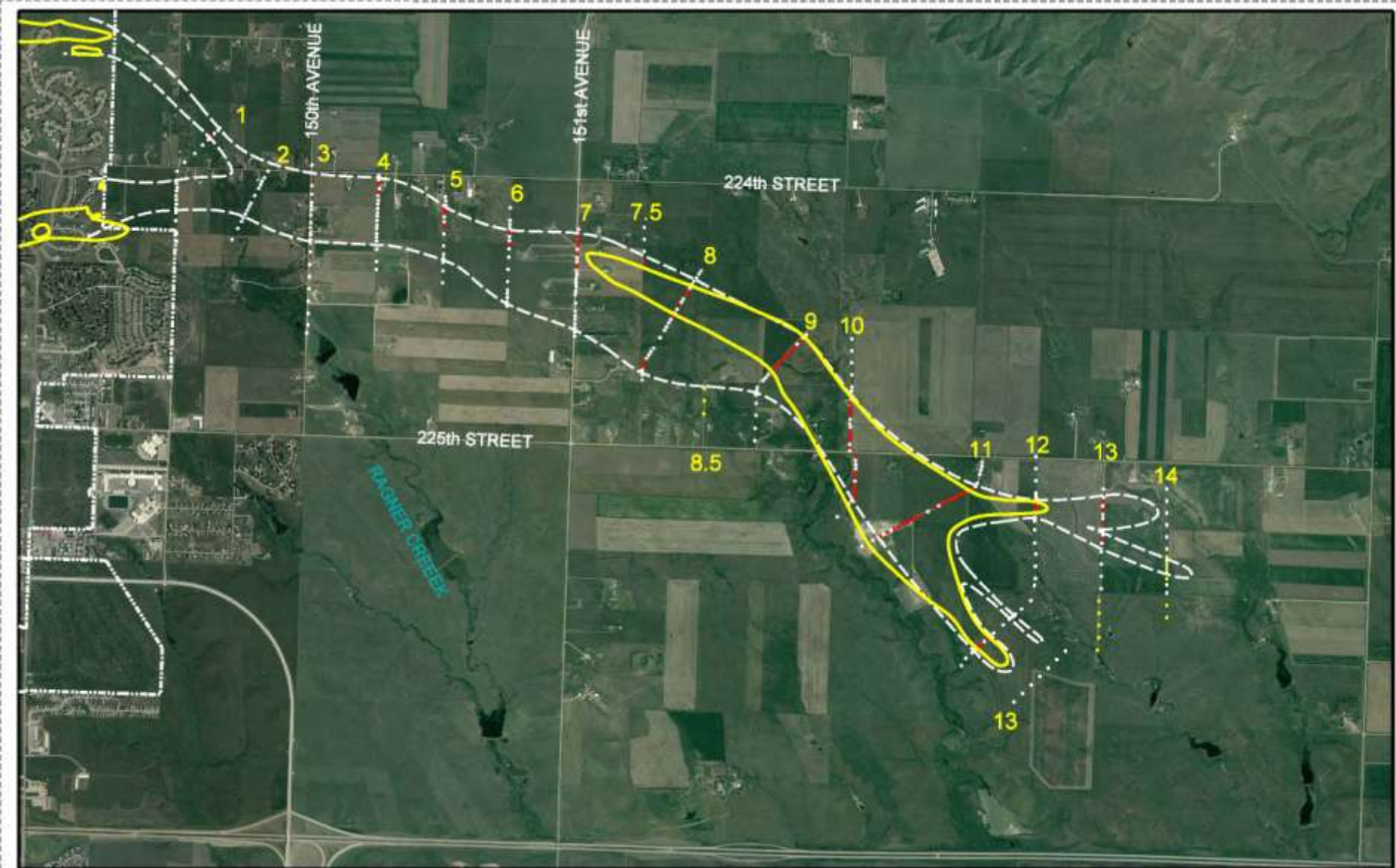


- Purpose - determine if remedies are protective.
- Required by Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).
- This is the third Five Year Review at Ellsworth AFB.
- Air Force, USEPA, and SDDENR participated in the Five Year Review.
- The Five Year Review report was approved in September 2010.
- Determined that all remedies are currently protective.



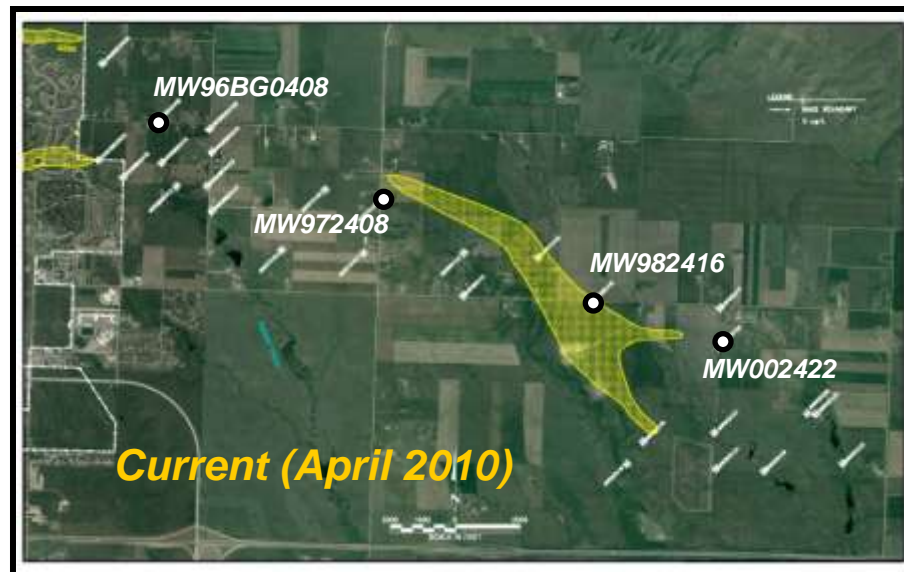
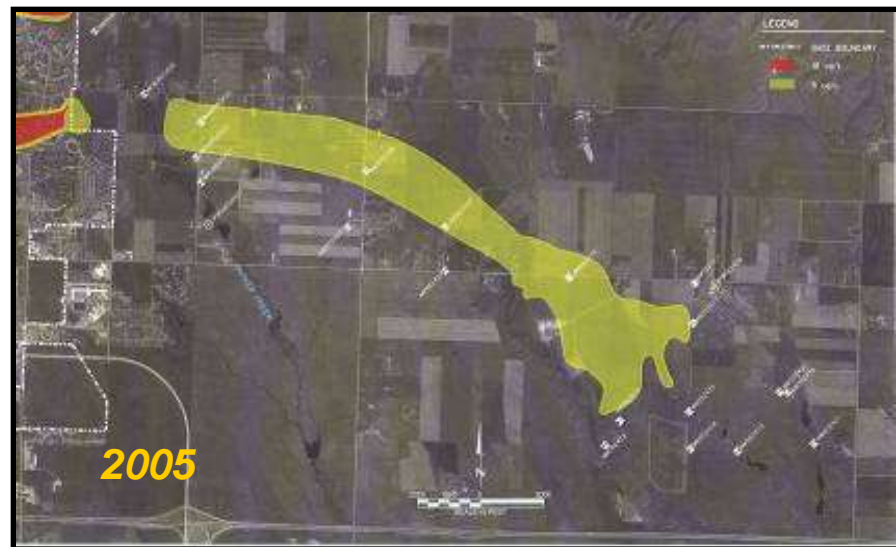
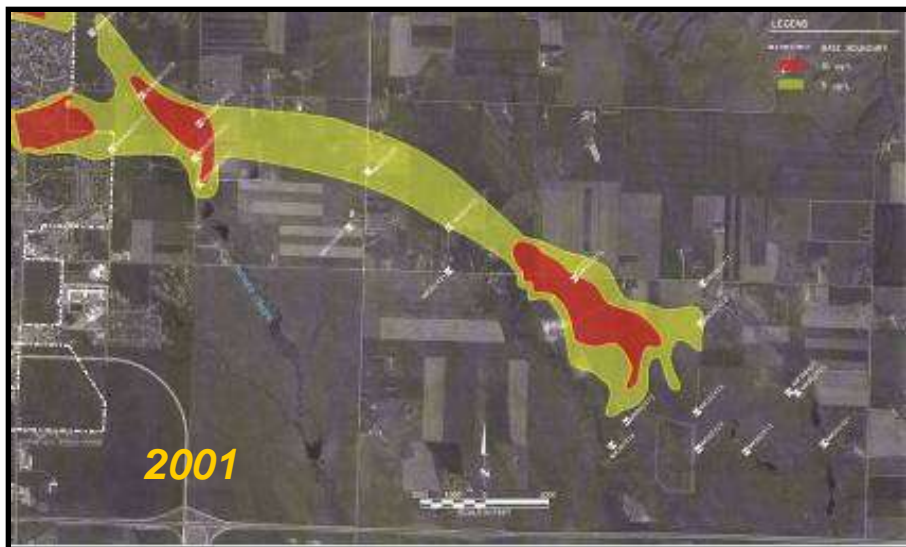
Off-Base Plume Map

Current Interpretation (April 2010)





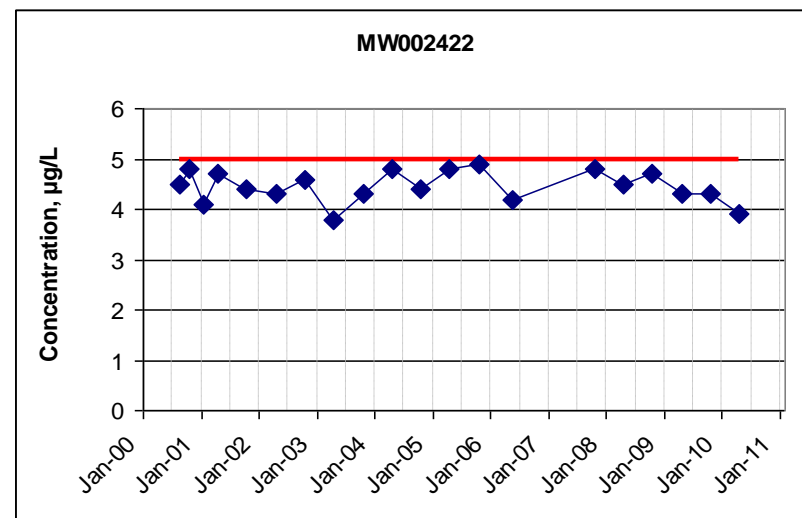
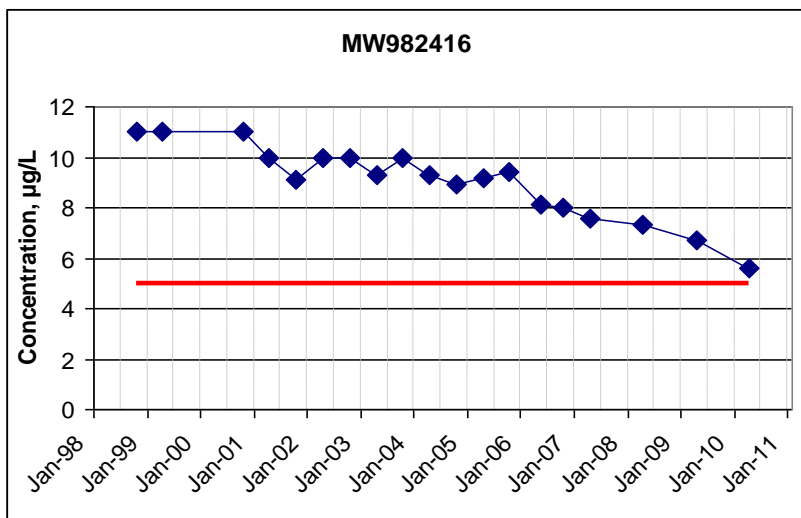
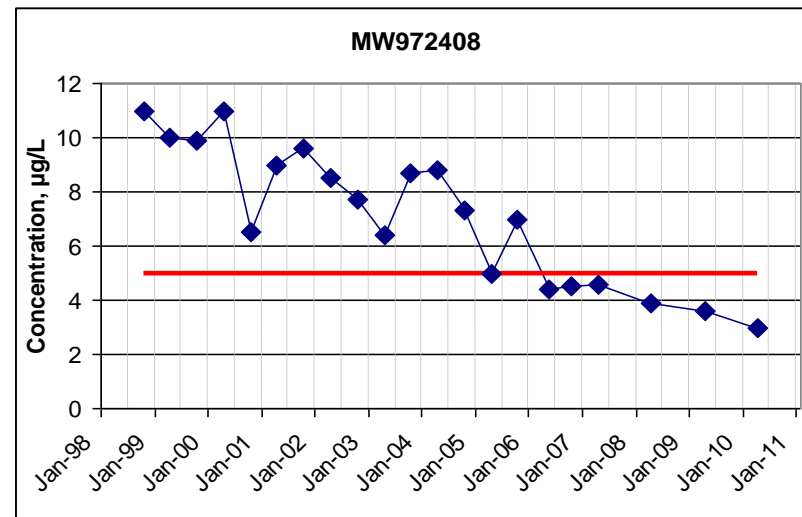
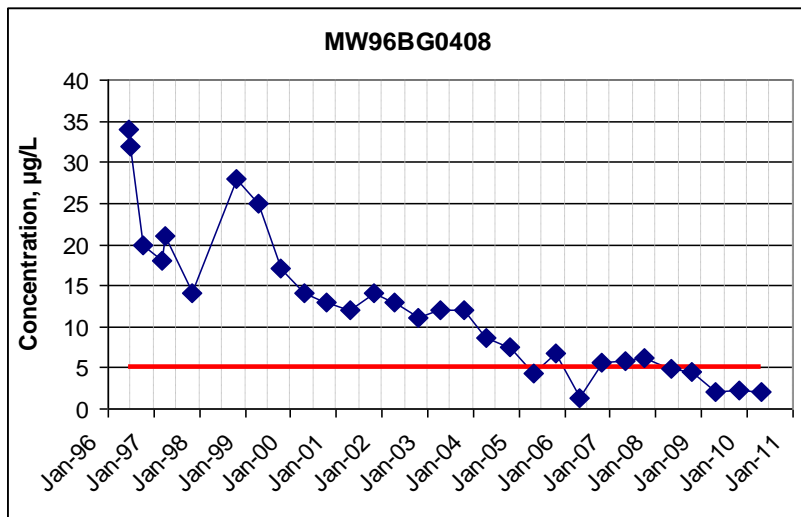
Off-Base Plume Attenuation Since Treatment Started (2001 – 2010)





TCE Trends in Off-Base Wells

Upgradient Northwest



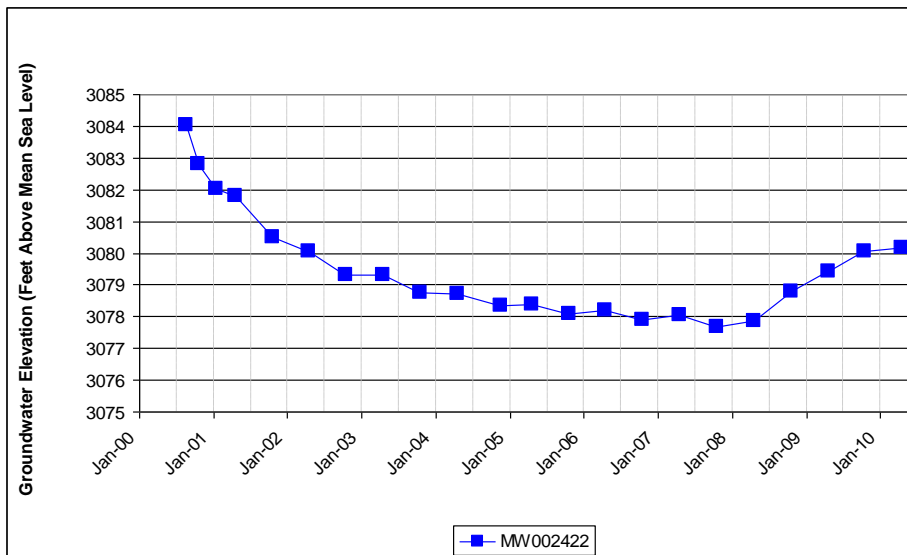
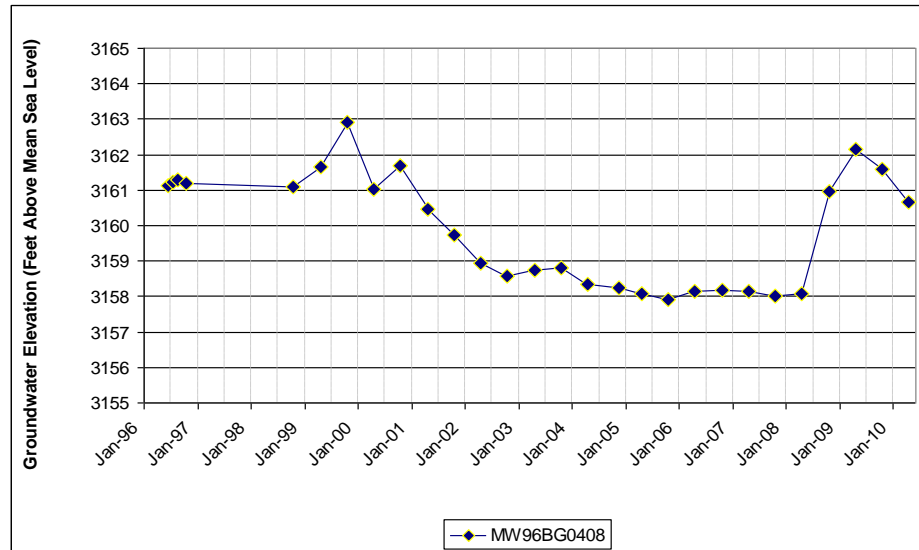
Downgradient Southeast



Water Level Trends in Off-Base Wells

MW96BG0408

**Located $\frac{1}{4}$ mile east of
Base boundary**



MW002422

**Located 3-1/2 miles east of
Base boundary**



Off-Base Plume Exit Strategy



Final Exit Strategy Report completed October 2010.

Process to allow non-potable use of groundwater:

- Air Force legal review of the final Exit Strategy report.
- DOJ review of proposed decision (declined to review).
- **Air Force decision whether to change ROD to allow new wells.**
- Preparation of ESD or ROD Amendment.
- SDDENR and USEPA review of proposed ESD or ROD Amendment.
- Public comment on proposed ROD changes.
- Review and signature by Air Force, USEPA, and SDDENR.
- Landowner submits request to drill new well for non-potable purposes.
- Preparation of new MOAs.
- Final legal review of proposed modifications to MOAs.
- Allow drilling of new wells.
- Air Force will continue to monitor off-Base plume.

Uncertainty

- On 22 Mar 2010, EPA Administrator Lisa Jackson announced the USEPA's intent to develop stricter regulations for certain carcinogenic compounds, including TCE.
- Timing and impact of stricter regulations unknown - Could result in delay of decision or reversal of decision at any point in the process.



Future Plans



Landfill Sites

- Continue routine inspection and monitoring.

Petroleum Release Sites

- Continue compliance monitoring until NFA status is granted.
- Operate and monitor dissolved oxygen treatment at PH5.

On-Base Plumes

- Continue performance monitoring of the 38 treatment zones and supplement existing treatment zones, as needed, based on results.
- Monitor the BG05/Twining Risner plume at the Base Boundary at increased frequency to track TCE trend.
- Amend the OU-11 ROD in 2011 to shut down active extraction systems.
- Operate biosparge system at OU-1 to treat smear zone.

Potential Deletions

- Pride Hangar Area of Concern.
- OU-1 vadose zone soils.
- Gateway Lake Ash Area of Concern.